

VI Regulatory Updates

Michigan DEQ VI Training

December 2013

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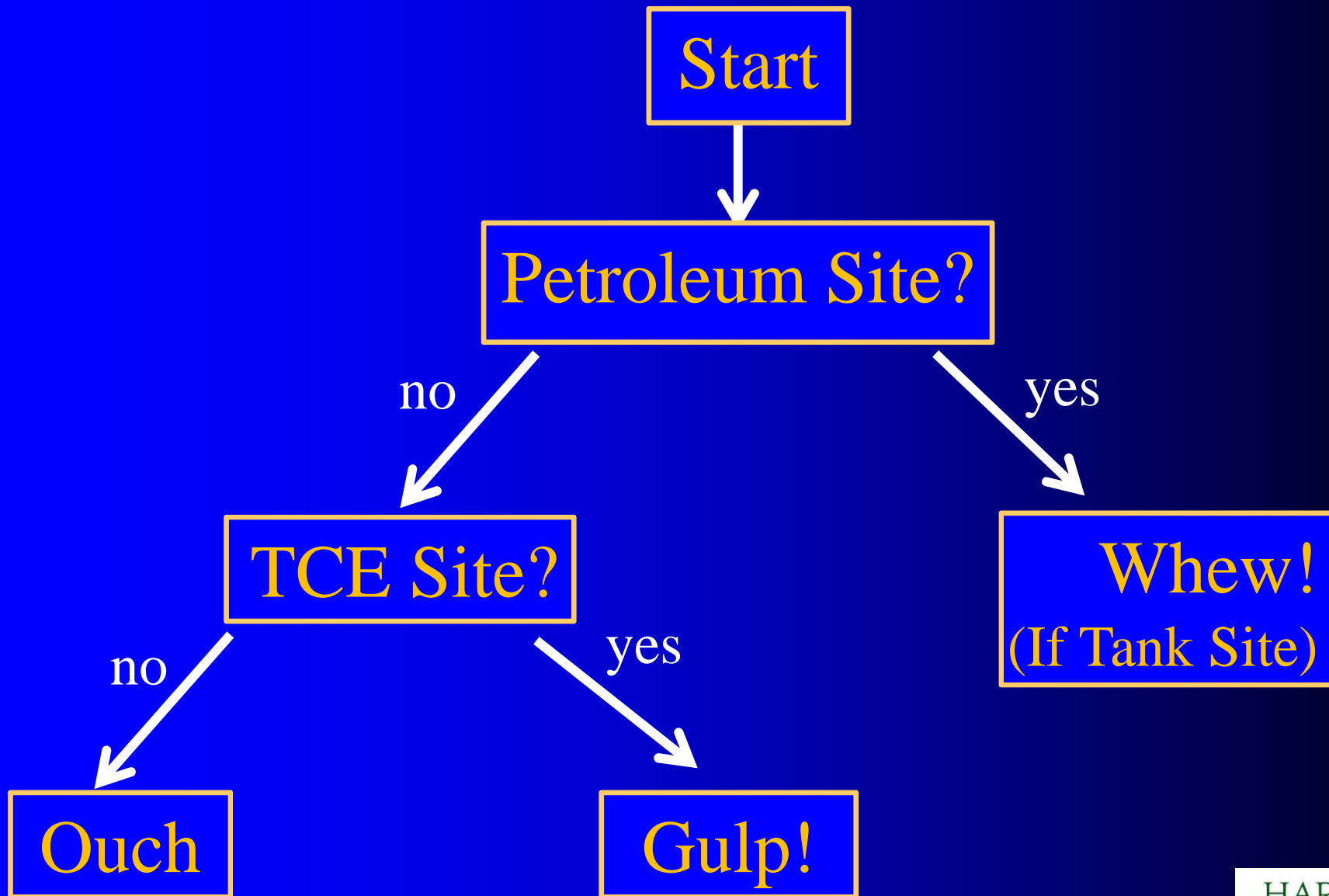
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VI Pathway Made Simple



EPA Guidance Updates

(Release Date: 2014?)

- EPA (OSWER & Superfund)
 - Multiple lines of evidence (**more expense & chances to lose**)
 - Preference for soil gas near source (**terrible for HCs!**)
 - Longer indoor air sampling period (7 to 21 days)
 - Fixed Att factor of 0.03 for shallow SG (**~15x drop**)
 - Sub-slab Att factor 0.03 (**3.3x increase**)
 - Sampling protocols inconsistent with EPA-ORD studies!

Comment Period Ended 6/24/13

<http://www.epa.gov/oswer/vaporintrusion>

EPA Guidance Updates

(Release Date: 2014?)

- EPA-OUST: Guidance for HCs
 - Exclusion criteria? Yay!
 - Testing/Adoption of Biovapor model? Bioscreen Model
 - No Screening Levels – Pipes you to OSWER!!

Comment Period Ended 6/24/13

<http://www.epa.gov/oust/cat/pvi/index.htm>

Allowable Benzene in GW

1e-6 cancer risk level

- New OSWER Guidance GW SL:

$$0.31 \text{ ug/m}^3 / 0.001 = 0.31 \text{ ug/L} / 0.2 = 1.5 \text{ ug/L}$$

- EPA-OUST Exclusion Value: 5000 ug/L

OSWER ~3300 times lower than OUST!!

*Current OUST Guidance Sends you to OSWER
For Screening Levels!!*

New TCE Standard (As of October 2011)

- Residential ($1e-6$ cancer risk)
 - Indoor Air cancer: 0.43 ug/m³ (down from 1.2 ug/m³)
 - Indoor Air non-cancer: 1.2 ug/m³ (Short Term Exposure?)
- Commercial/Industrial ($1e-5$ cancer risk)
 - Indoor Air: 5.1 ug/m³ (down from 15.1 ug/m³)
 - Indoor Air non-cancer: 15.1 ug/m³
 - But if Pregnant employees, then 2.1 ug/m³ could apply

**ASTDR
SAYS
21 UG/M3**

For $1e-5$ State, non-cancer value < cancer value

New PCE Standard

(As of March 2012)

- Residential ($1e-6$)
 - Indoor Air cancer: 9.4 ug/m³ (up from 0.41 ~22x !!)
 - Indoor Air non-cancer: ~47 ug/m³
- Industrial ($1e-6$)
 - Indoor Air: ~47 ug/m³ (up 22x)
 - Indoor Air non-cancer: 175 ug/m³

For $1e-5$ State, non-cancer value < cancer value

Soil Gas Allowed Levels

Benzene in Soil Gas, Residential Receptor, $1e-5$ Risk

	RBSL ($\mu\text{g}/\text{m}^3$)
MI SS & shallow soil gas (<5')	110*
EPA OSWER sub-slab	103
EPA OUST (from GW)	1,000,000
CA Low-Risk Policy: $\text{O}_2 > 4\%$	85,000

**Michigan Generic Value – Does Not Include Bio*

Soil Gas Allowed Levels

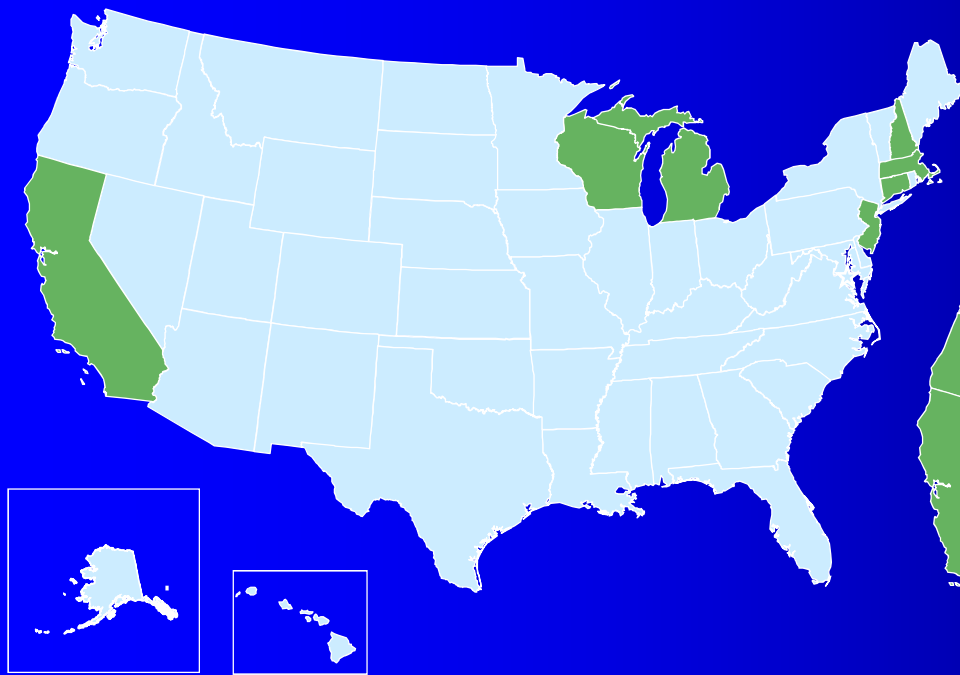
PCE in Soil Gas, Residential Receptor (1e-5 risk)

	RBSL (ug/m ³)
MI SS & shallow soil gas (<5')	1,200
EPA Sub-slab proposed	1,567
EPA – 5' soil gas now	23,500
EPA – 5' soil gas proposed	470

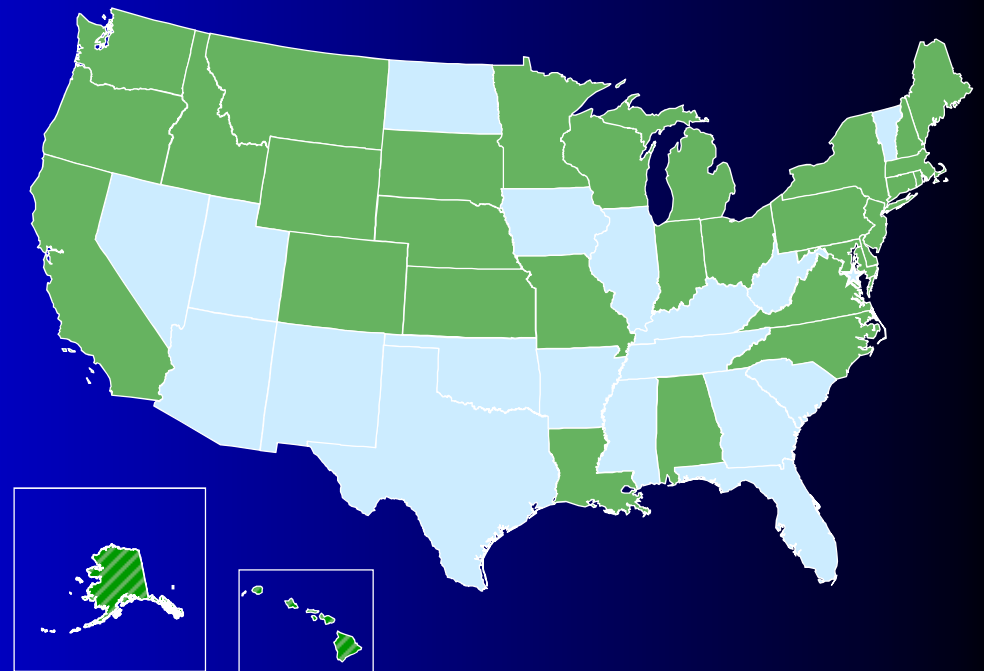
Michigan Value in Line with EPA

VI Regulatory State Guidance

States with Regulatory VI Guidance in 2004



States with Regulatory Guidance in 2013



36 States Now Have VI Guidance